

Fig. 5

3-Dimensional Image capture (per frame)

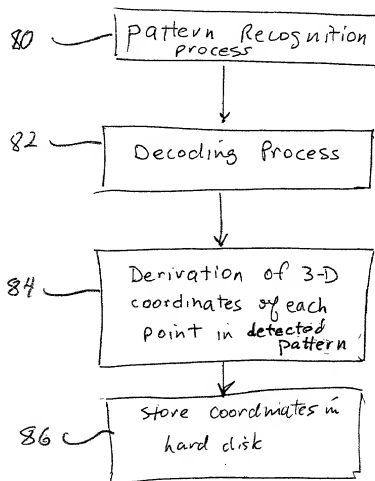


Fig. 6

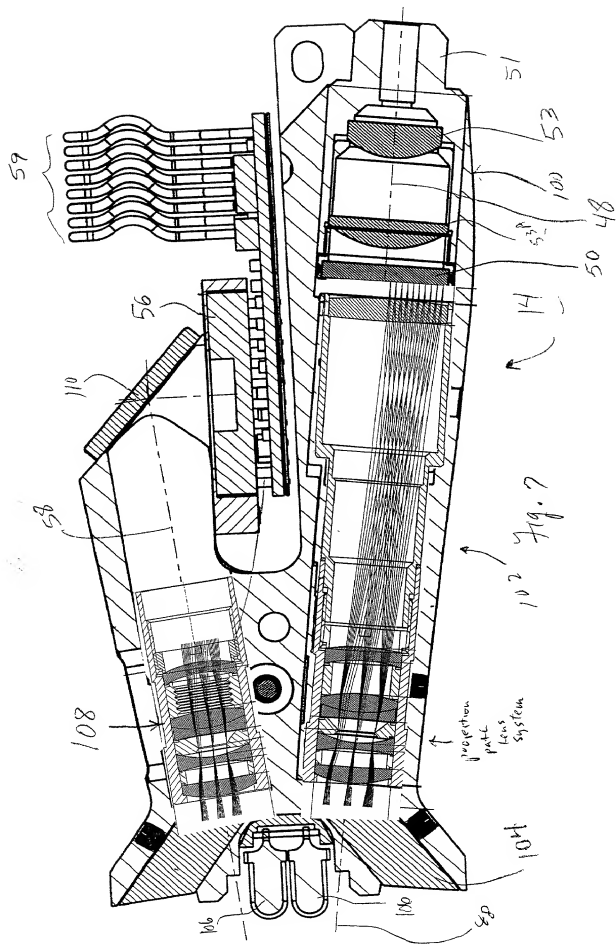
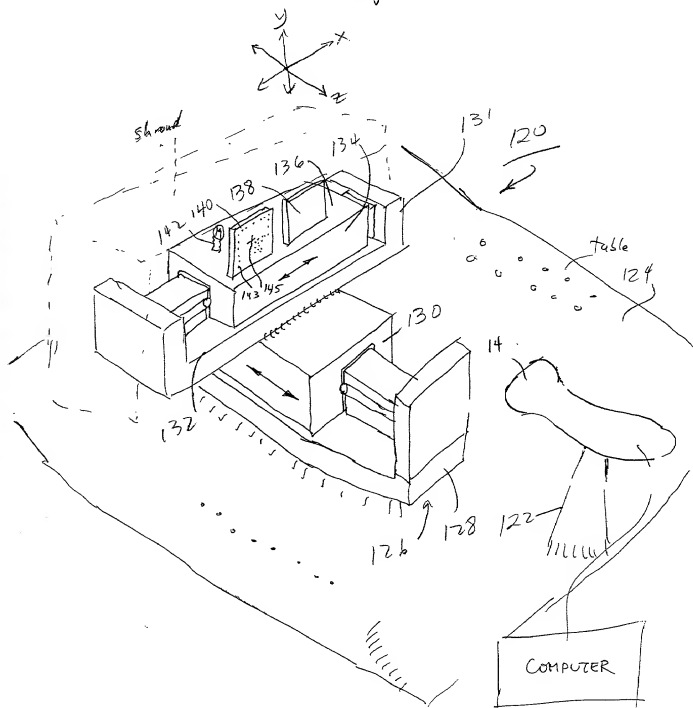


Fig. 8

P. 11



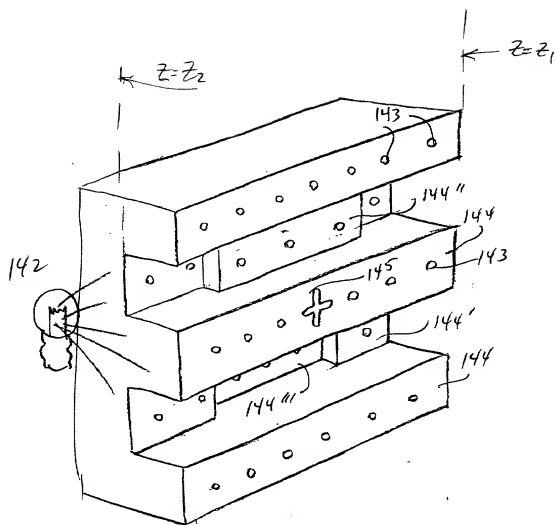


Fig. 8A

Fig. 9

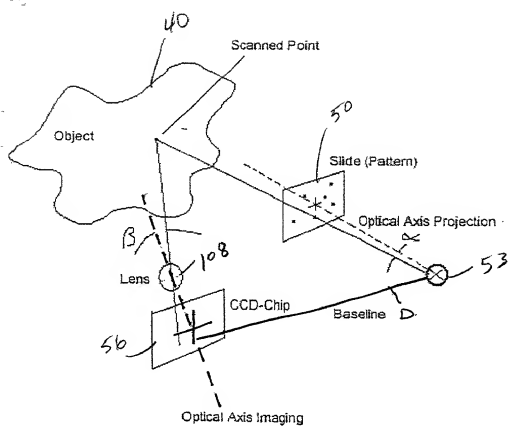


Fig. 9B

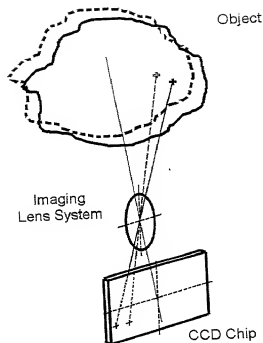


Fig. 9A

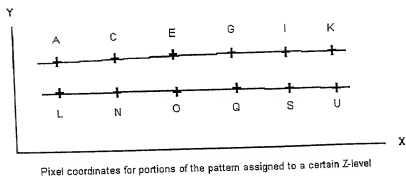
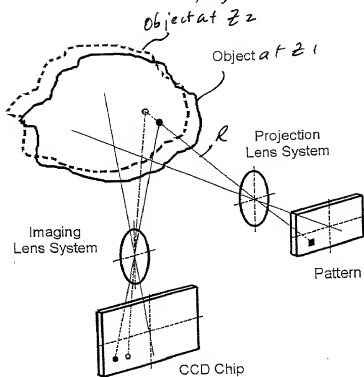
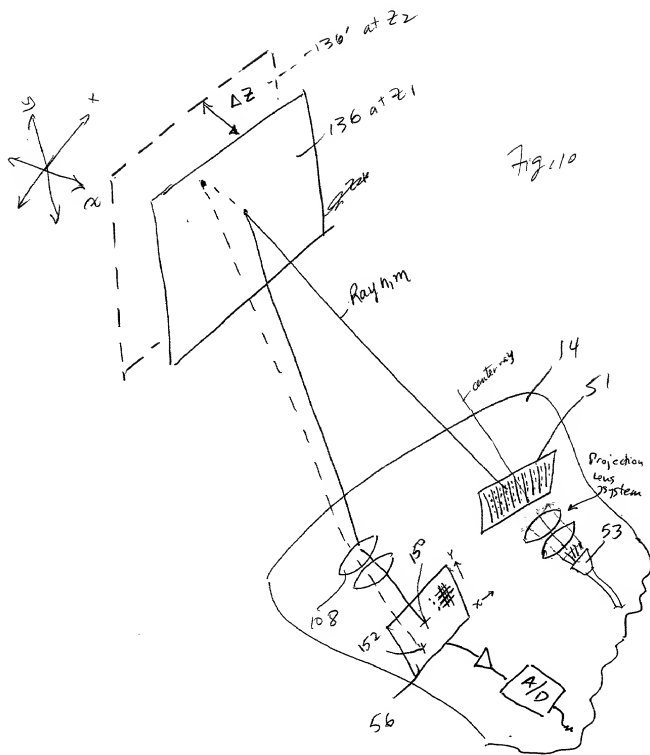


Fig. 9C



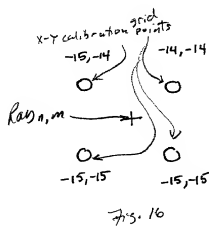
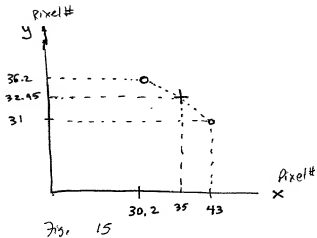
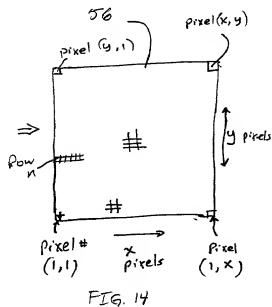
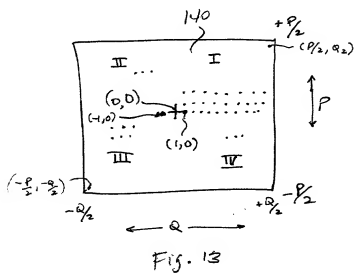
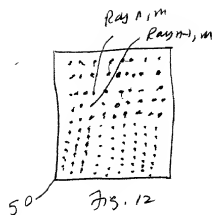
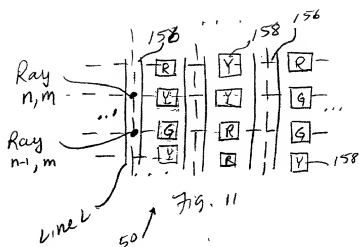


Fig. 17

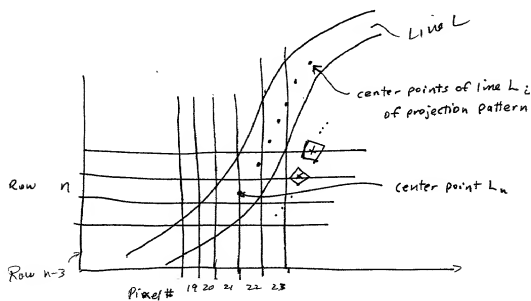
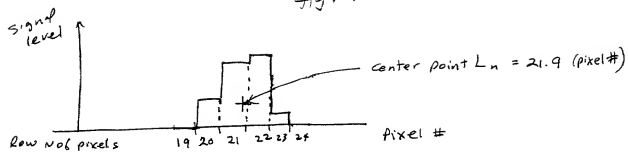


Fig. 18

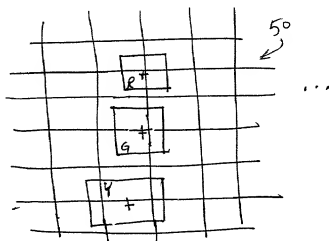


Fig. 19

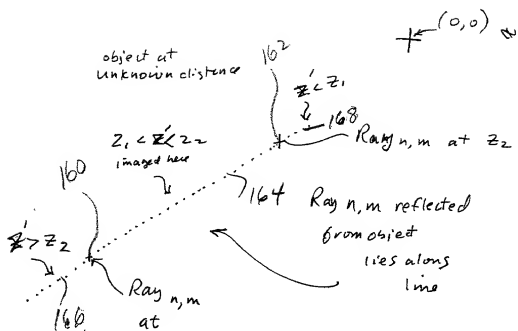
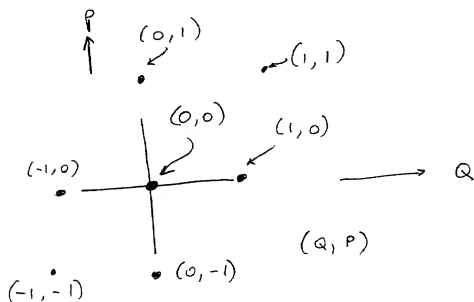


Fig. 22

Fig. 23



$CCD_x, CCD_y = \text{pixel \#}, \text{in subpixel resolution}$

Fig. 24

(before)

Calibration Table #1

	Line 1					Line 2					...					Line N				
	Row1	Row2	Row3	Row4	RowM	Row1	Row2	Row3	Row4	RowM	...	...	...	Row1	Row2	...	RowM
CCD_x	1.0	1.1	1.5	2.1	...	27.1	29.5	30.2	37.1											
mm dist.																				
CCD_y	102	204	328	445	...	11.5	21.6	36.2	44											
mm dist.																				
CCD_x	3.9	4.5	6.8	12.2		34.0	41.1	43.0	46											
mm dist.																				
CCD_y	121	215	304	463		13.2	21.8	31.0	482											
mm dist.																				

Z₁

Z₂

(Q, P)

Calibration Table #2

	Quadrant I				Quadrant II				Quadrant III				Quadrant IV			
	Row 0				Row 1				Row 2				Row 3			
	(0,0)	(1,0)	(2,0)	(3,0)	(0,1)	(1,1)	(2,1)	(3,1)	(0,2)	(1,2)	(2,2)	(3,2)	(0,3)	(1,3)	(2,3)	(3,3)
Z ₁	640.1	700.2	760.6	820.5	...	...	...	...	...	...	...	...	...	...	...	...
CCP _X	640.1	640.1	640.3	640.4	...	...	...	...	...	...	...	...	...	...	...	...
CCP _Y	640.1	640.1	640.3	640.4	...	...	...	...	...	...	...	...	...	...	...	...
Z ₂	640.2	680.3	741.2	801.6	...	...	...	...	...	...	...	...	...	...	...	...
CCD _X	640.2	640.3	640.1	640.1	...	...	...	...	...	...	...	...	...	...	...	...
CCD _Y	640.2	640.3	640.1	640.1	...	...	...	...	...	...	...	...	...	...	...	...

Calibration Table #2

	Row 0				Row 1				Row 2				Row 3			
	(-1,0)	(2,0)	(3,0)	(-4,0)	(-1,1)	(2,1)	(3,1)	(-4,1)	(-1,2)	(2,2)	(3,2)	(-4,2)	(-1,3)	(2,3)	(3,3)	(-4,3)
Z ₁
CCD _X
CCD _Y
Z ₂
CCD _X
CCD _Y

Calibration Table #2

	Row 0				Row 1				Row 2				Row 3			
	(0,0)	(1,0)	(2,0)	(3,0)	(0,1)	(1,1)	(2,1)	(3,1)	(0,2)	(1,2)	(2,2)	(3,2)	(0,3)	(1,3)	(2,3)	(3,3)
Z ₁
CCD _X
CCD _Y
Z ₂
CCD _X
CCD _Y

Calibration Table #2

	Row 0				Row 1				Row 2				Row 3			
	(0,0)	(1,0)	(2,0)	(3,0)	(0,1)	(1,1)	(2,1)	(3,1)	(0,2)	(1,2)	(2,2)	(3,2)	(0,3)	(1,3)	(2,3)	(3,3)
Z ₁
CCD _X
CCD _Y
Z ₂
CCD _X
CCD _Y

719.25

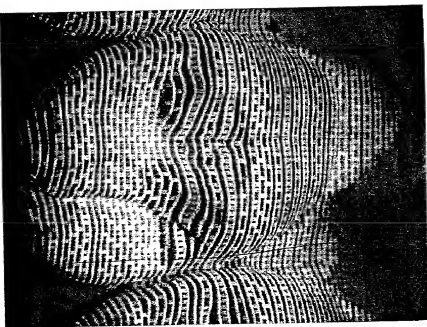


Fig. 27

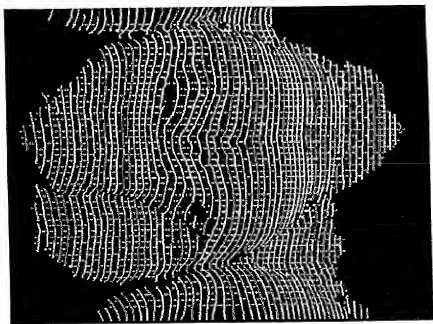


Fig. 28



FIG. 29

FIG.
30

FIG. 31



FIL. 32

0923007.01204



FIG. 33

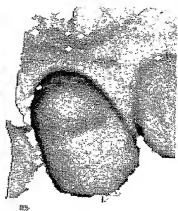


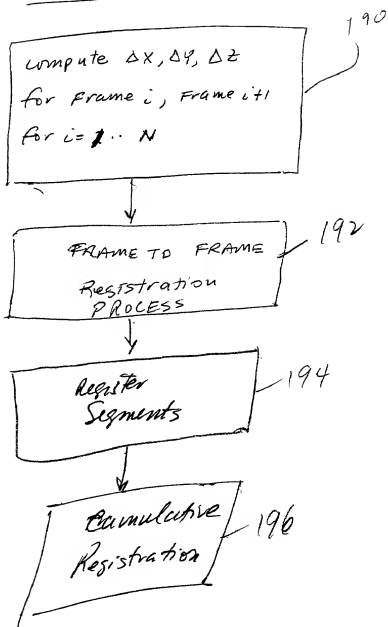
FIG. 34



FIG.
35

Fig. 36

Registration



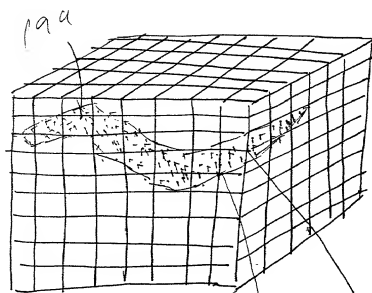
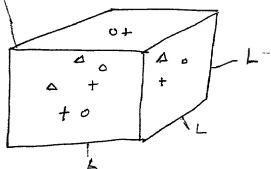


Fig. 37A

Fig.
37B



$L = 1.0 \text{ mm}$

Δ = points of frame i
 $+$ = points of frame $i+1$
 \circ = points of frame $i+2$

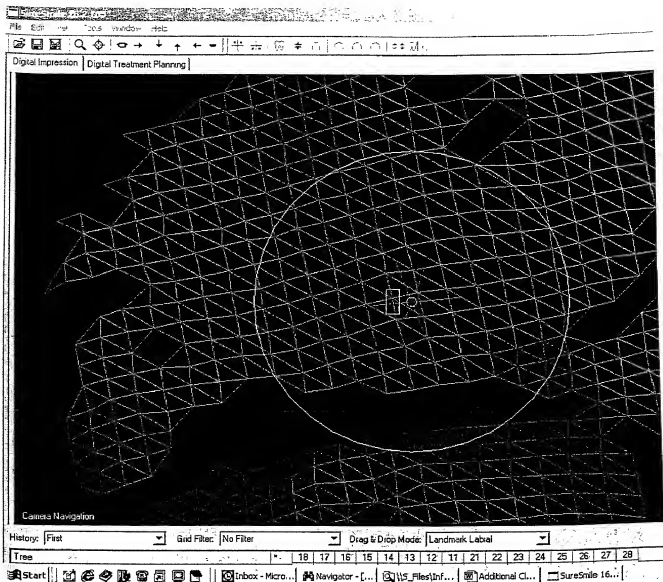
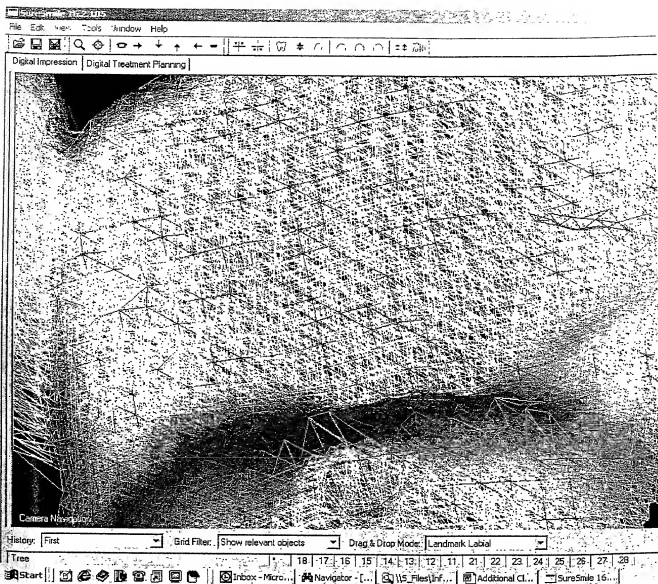
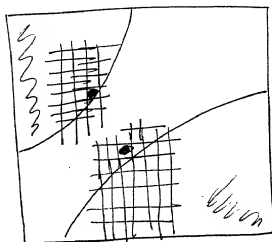


Figure 37c



75-32D



Frame i Fig.
38A

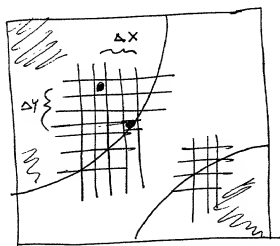


Fig. 38B
Frame i+1

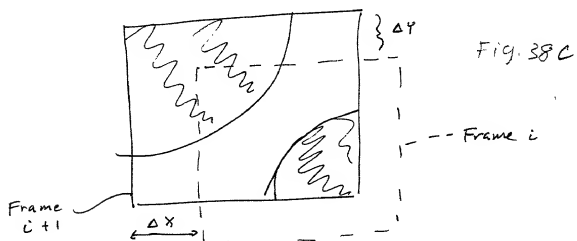
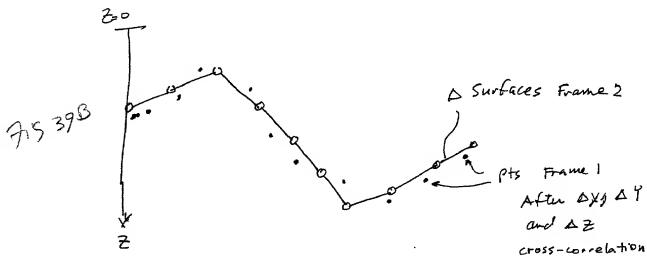
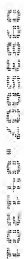


Fig. 38C

Case	Age	Sex	Site	Pathology	Survival
1	65	M	Rectum	Adenocarcinoma	10 years
2	72	F	Rectum	Adenocarcinoma	12 years
3	68	M	Rectum	Adenocarcinoma	11 years
4	70	F	Rectum	Adenocarcinoma	13 years
5	66	M	Rectum	Adenocarcinoma	14 years
6	71	F	Rectum	Adenocarcinoma	15 years
7	69	M	Rectum	Adenocarcinoma	16 years
8	73	F	Rectum	Adenocarcinoma	17 years
9	67	M	Rectum	Adenocarcinoma	18 years
10	74	F	Rectum	Adenocarcinoma	19 years
11	64	M	Rectum	Adenocarcinoma	20 years
12	75	F	Rectum	Adenocarcinoma	21 years
13	63	M	Rectum	Adenocarcinoma	22 years
14	76	F	Rectum	Adenocarcinoma	23 years
15	62	M	Rectum	Adenocarcinoma	24 years
16	77	F	Rectum	Adenocarcinoma	25 years
17	61	M	Rectum	Adenocarcinoma	26 years
18	78	F	Rectum	Adenocarcinoma	27 years
19	60	M	Rectum	Adenocarcinoma	28 years
20	79	F	Rectum	Adenocarcinoma	29 years
21	59	M	Rectum	Adenocarcinoma	30 years
22	80	F	Rectum	Adenocarcinoma	31 years
23	58	M	Rectum	Adenocarcinoma	32 years
24	81	F	Rectum	Adenocarcinoma	33 years
25	57	M	Rectum	Adenocarcinoma	34 years
26	82	F	Rectum	Adenocarcinoma	35 years
27	56	M	Rectum	Adenocarcinoma	36 years
28	83	F	Rectum	Adenocarcinoma	37 years
29	55	M	Rectum	Adenocarcinoma	38 years
30	84	F	Rectum	Adenocarcinoma	39 years
31	54	M	Rectum	Adenocarcinoma	40 years
32	85	F	Rectum	Adenocarcinoma	41 years
33	53	M	Rectum	Adenocarcinoma	42 years
34	86	F	Rectum	Adenocarcinoma	43 years
35	52	M	Rectum	Adenocarcinoma	44 years
36	87	F	Rectum	Adenocarcinoma	45 years
37	51	M	Rectum	Adenocarcinoma	46 years
38	88	F	Rectum	Adenocarcinoma	47 years
39	50	M	Rectum	Adenocarcinoma	48 years
40	89	F	Rectum	Adenocarcinoma	49 years
41	49	M	Rectum	Adenocarcinoma	50 years
42	90	F	Rectum	Adenocarcinoma	51 years
43	48	M	Rectum	Adenocarcinoma	52 years
44	91	F	Rectum	Adenocarcinoma	53 years
45	47	M	Rectum	Adenocarcinoma	54 years
46	92	F	Rectum	Adenocarcinoma	55 years
47	46	M	Rectum	Adenocarcinoma	56 years
48	93	F	Rectum	Adenocarcinoma	57 years
49	45	M	Rectum	Adenocarcinoma	58 years
50	94	F	Rectum	Adenocarcinoma	59 years
51	44	M	Rectum	Adenocarcinoma	60 years
52	95	F	Rectum	Adenocarcinoma	61 years
53	43	M	Rectum	Adenocarcinoma	62 years
54	96	F	Rectum	Adenocarcinoma	63 years
55	42	M	Rectum	Adenocarcinoma	64 years
56	97	F	Rectum	Adenocarcinoma	65 years
57	41	M	Rectum	Adenocarcinoma	66 years
58	98	F	Rectum	Adenocarcinoma	67 years
59	40	M	Rectum	Adenocarcinoma	68 years
60	99	F	Rectum	Adenocarcinoma	69 years
61	39	M	Rectum	Adenocarcinoma	70 years
62	100	F	Rectum	Adenocarcinoma	71 years
63	38	M	Rectum	Adenocarcinoma	72 years
64	101	F	Rectum	Adenocarcinoma	73 years
65	37	M	Rectum	Adenocarcinoma	74 years
66	102	F	Rectum	Adenocarcinoma	75 years
67	36	M	Rectum	Adenocarcinoma	76 years
68	103	F	Rectum	Adenocarcinoma	77 years
69	35	M	Rectum	Adenocarcinoma	78 years
70	104	F	Rectum		



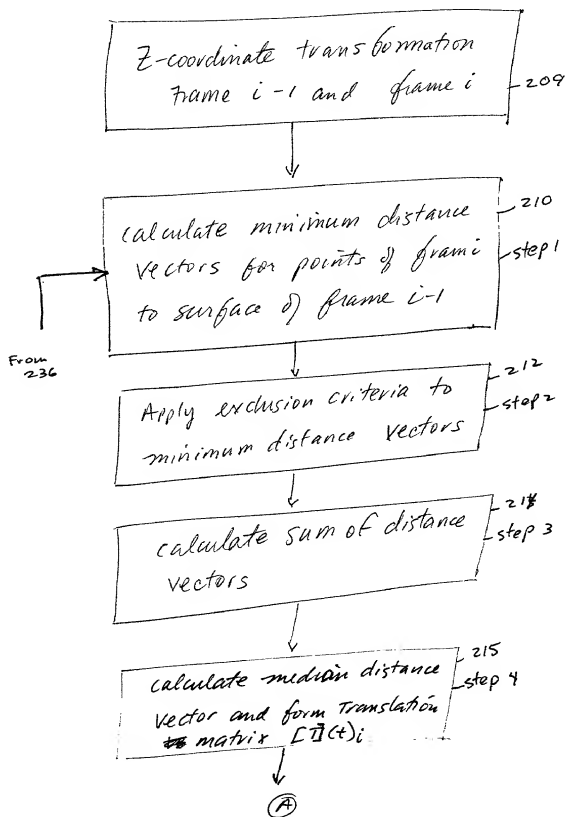
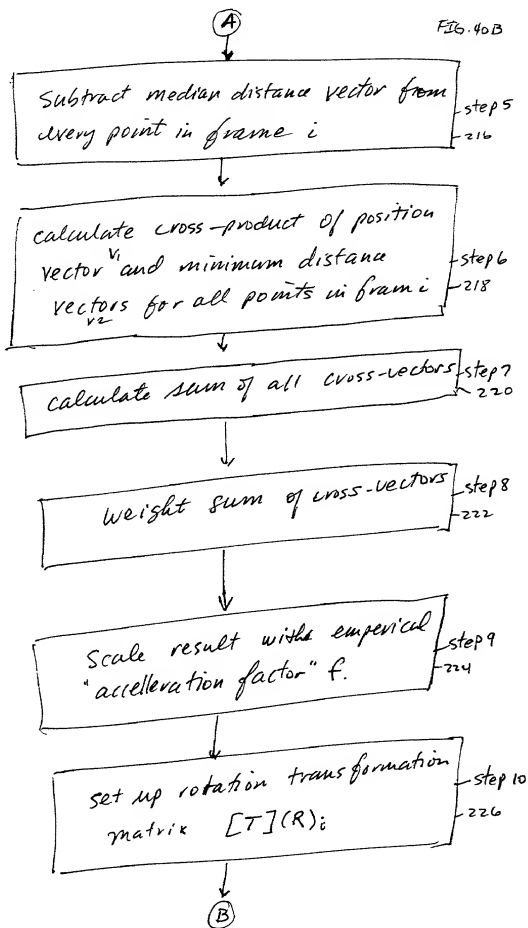
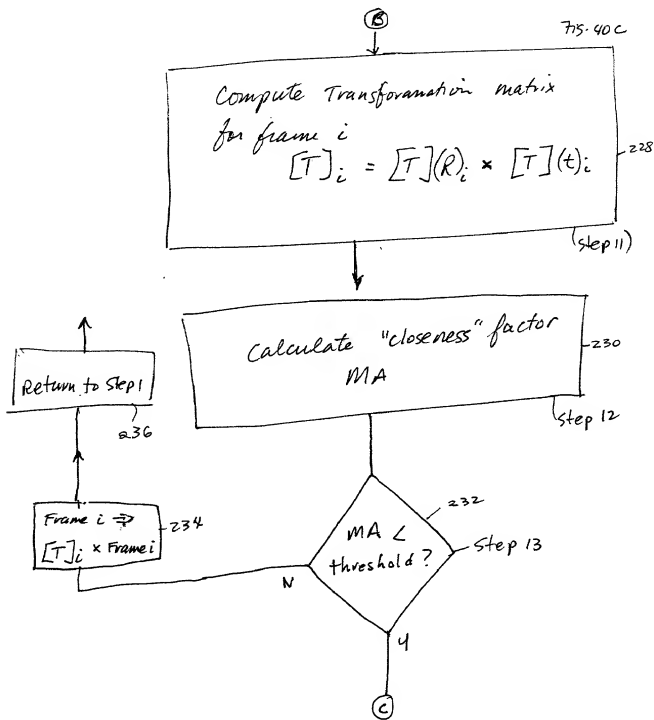


FIG. 40B





Frame to
Frame
registration

Fig. 40 D

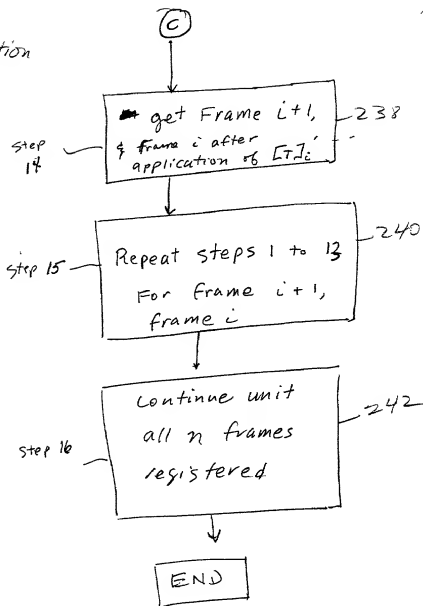


FIG. 41

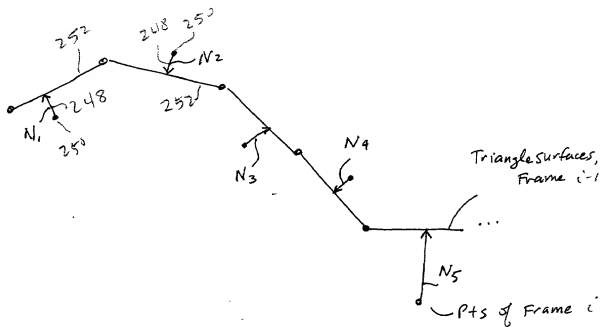


Fig. 42

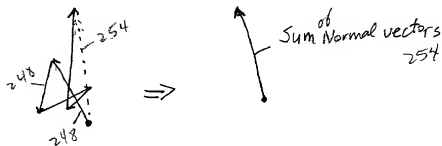


FIG. 43

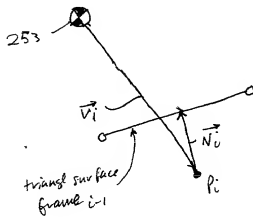
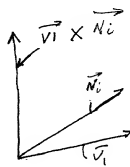


FIG. 44



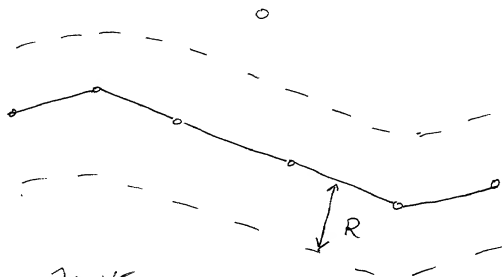


Fig. 45

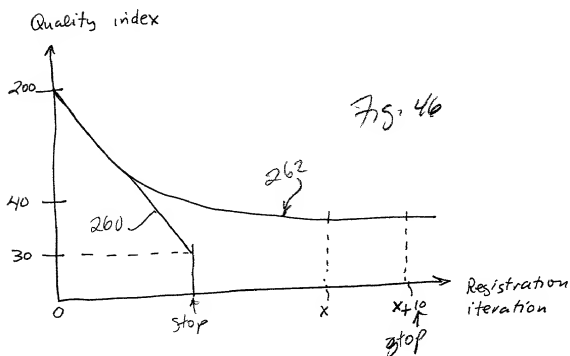
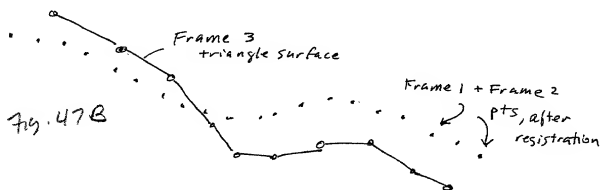
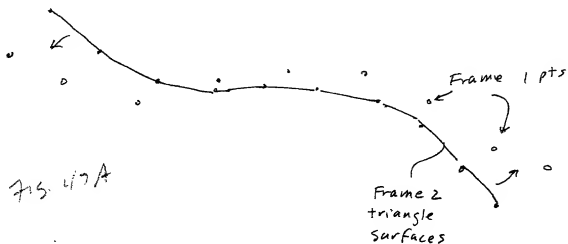
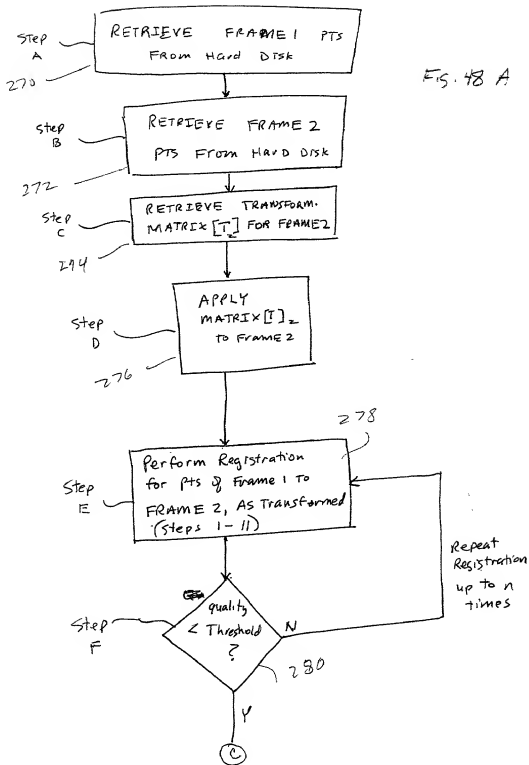


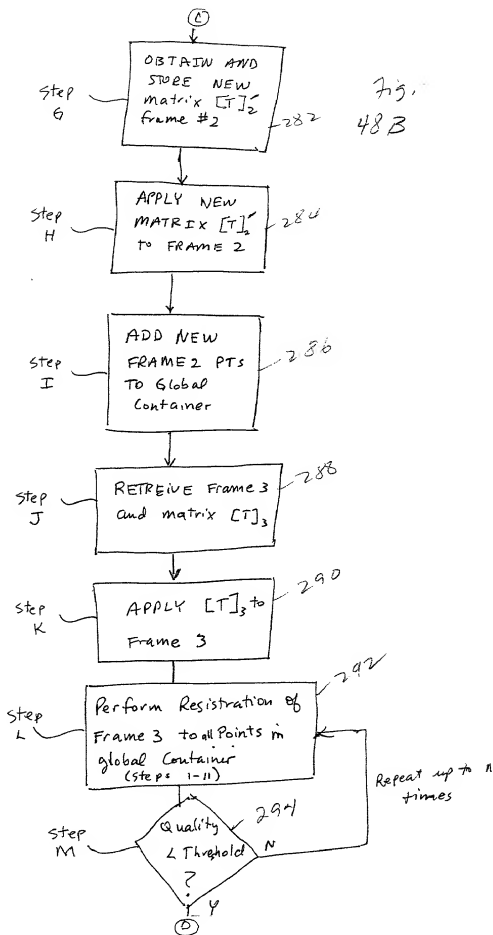
Fig. 46



Cumulative
Registration



Cumulative
registration



Cumulative
registration

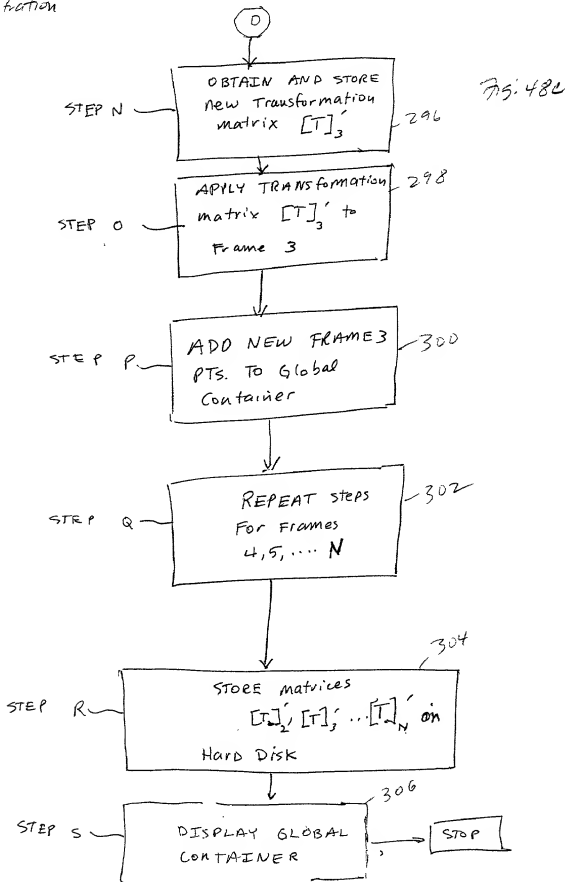


Fig. 49

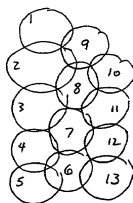
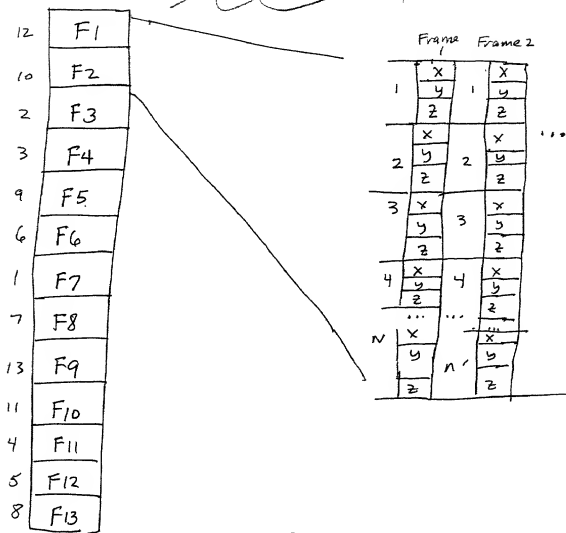


Fig. 50

Fig. 51

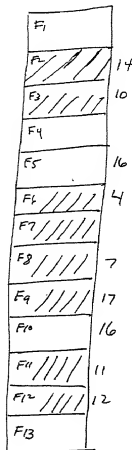


Fig. 52

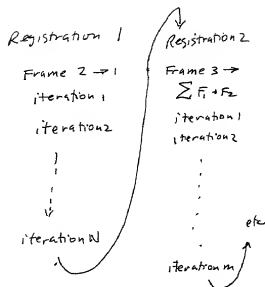


Fig. 53

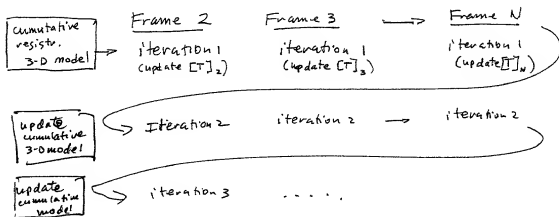


FIG. 54

C Single

C Cumulative

X	Y	Z
0.00	0.00	0.00
3.00	0.00	0.00
3.00	0.00	0.00
0.00	3.00	0.00
0.00	3.00	0.00

Registration (raw)	
Distance limit (SYX)	250.000 y
Stationary count	5
Radius (SYX)	2.000 mm
Convergence factor	0.100
Number of points to register	400
Accelerate factor	1.6

Registration (raw + line)	
Maximal iteration count	400
Overlap size	6.000
Minimum queue of active points (0..1)	0.200
Maximal triangle size (larger triangles are finished as pairs)	0.500
Maximal edge length (larger edges have no attraction)	1.800 mm
Maximal count of unsuccessful lines (new segment is started when exceeded)	2

Form factor, Proportion of point distance and element size ($\gamma=0$)	0.1
---	-----

Registration (line)	
Distance limit (SYX)	50.000 y
Final distance	40.000 y
Stationary count	10
Radius (SYX)	0.500 mm
Convergence factor	0.010
Number of points to register	400
Accelerate factor	1.3

general

Count of SX surfaces for animation (0 = off)	20
--	----

Cell size

Cell size	16
-----------	----

☒ Combine frames cumulative☒ Combine segments cumulative

Merging

Radius of sphere inside which is to replace	0.500 mm
---	----------

Maximal count of edge lines for closing gaps	16
--	----

Minimal triangle plane size for closing gaps

Minimal triangle plane size for closing gaps	0.010
--	-------

Maximal edge length for closing gaps

Maximal edge length for closing gaps	1.500 mm
--------------------------------------	----------

Minimal distance from point of base quantity

Minimal distance from point of base quantity	0.400 mm
--	----------

Maximal distance from edge of base quantity

Maximal distance from edge of base quantity	0.000 mm
---	----------

三

File Edit View Tools Windows Help



Camera Navigation

Drain & Drop Mode
Landmark Label

01/18/01 14:08:47
01/18/01 14:08:47
01/18/01 14:08:47
01/18/01 14:08:47
01/18/01 13:11:40

(c) Digital Impression Scene Graph

Segment 03

Segment 00
Segment 01
Segment 05

50 percent of the
total population of the

Journal of Management Education 37(1)

107. *Streptococcus*

Upper law from

! Frame_01

Frame 01

: : [] Frame_01_

Frame_01_

17. **Form 01**

Figure 1

Landmark Label	9
----------------	---

75.57

A diagram showing the upper jaw front segments, labeled "upper jaw front (segment)". The diagram consists of two rows of boxes. The top row has 18 boxes numbered 1 through 18 from left to right. The bottom row has 18 boxes, some of which are shaded black. A bracket labeled "306" spans across the middle of the bottom row.

Fig. 58 A

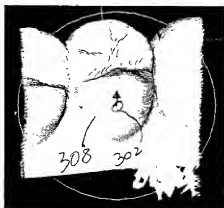


Fig. 58 B

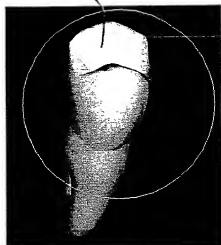


Fig. 58 C

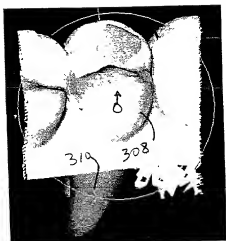


Fig. 58 D

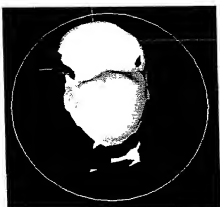


Fig. 58 E

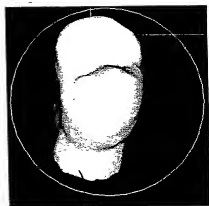
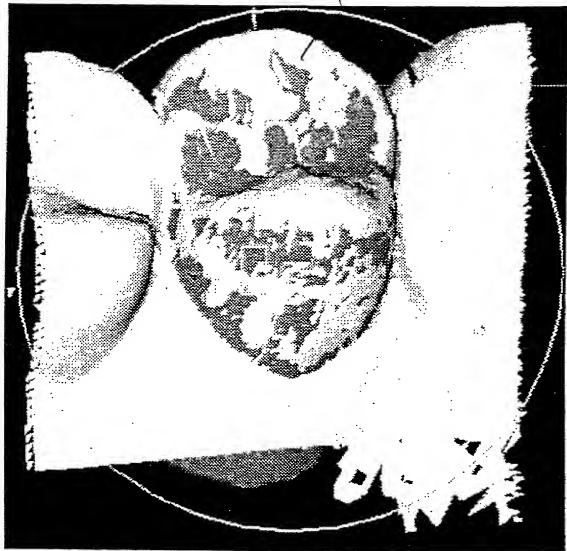


Fig. 58 F

312



715. 59

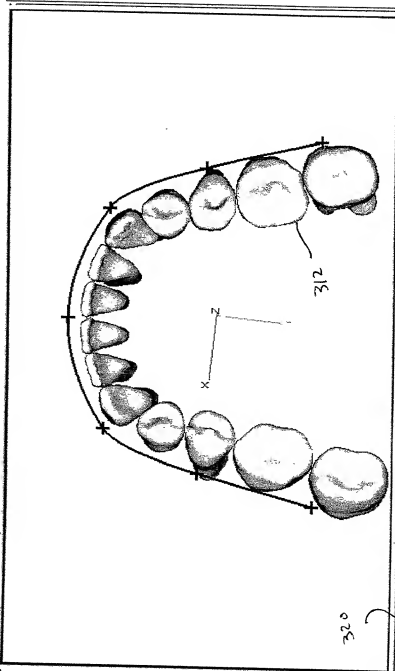
StarSmile 22.2.8

File Edit View Tools Window Help



Digital Impression Digital Treatment Planning

- ☒ Schmidt, Frank
- ☒ + Noctis Stages
- ☒ - Observed (17-27)
- ☒ - Target
- ☒ + Mandible Stages
- ☒ - Observed (17-37)
- ☒ Target



● Patient ● Lines ● Differences ● Space Management ● Bonding Correction ● Technique ● U/L Relation ● Bracket Offset ● Slide Line ● Target Correction

Slide Line

Cuspid Distance	30.2 mm	30.2 mm
Molar Dist. (47-37)	57.0 mm	57.0 mm
Center Line Offset	0.0 mm	0.0 mm
Radius at Front	25.0 mm	25.0 mm

<input checked="" type="checkbox"/> Symmetric	<input checked="" type="checkbox"/> Apply on right quadrant	<input checked="" type="checkbox"/> Apply on left quadrant
<input checked="" type="checkbox"/> Asymmetric		
Molar	27.9 mm	27.9 mm
Transversal	38.7 mm	38.7 mm
Angle	76.0°	76.0°

Front	15.9 mm	15.9 mm
Middle	19.6 mm	19.6 mm
Back	5.7 mm	5.7 mm
Flare	0.0°	0.0°

For help, press F1

NUM

102110" 20952860

SurfSmile 22.2.0 File Edit View Tools Window Help



Digital Impression Digital Treatment Planning

- ☒ Schmidt, Frank
- ☒ Maxilla Stages
- ☒ Observed (17-27)
- ☒ Target (16x22 S)
- ☒ Mandible Stages
- ☒ Observed (17-37)
- ☒ Target (16x22 S)

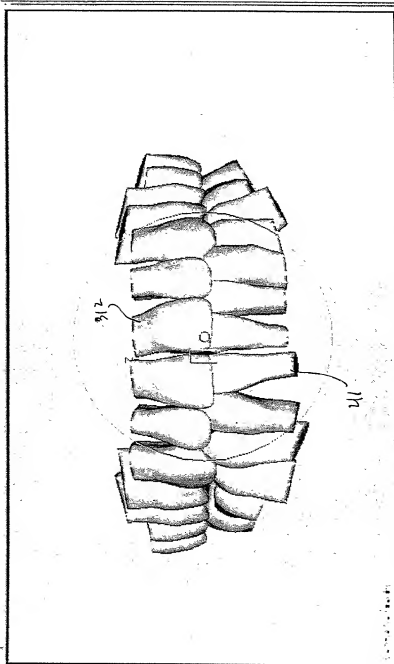


fig. 62

Patient		Limits		Differences		Space Management		Bonding Connection		Technique		U/LA Relation		Brackial Offset		Wire		Forces		Wire Offset	
Space Management																					
Observed Stage		46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
Current Stage (2)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Target Stage		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Metal gap size		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Tooth Thicken																					

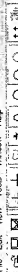
For help, press F1

MIN

TOOTH "02552560"

SurfSmile 22.2.8

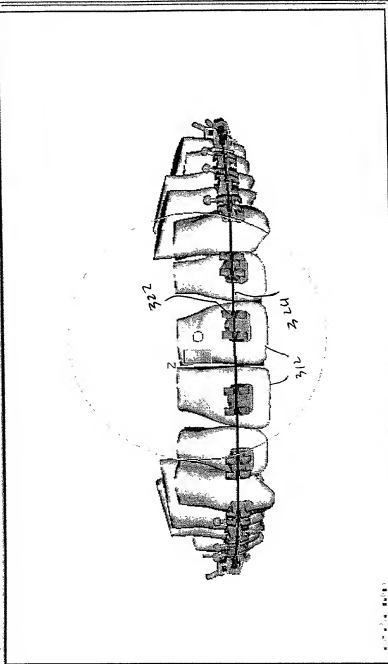
File Edit View Tools Window Help



Tool 13

Digital Impression Digital Treatment Planning

- ☒ Schmidt, Frank
- ☒ H + Mesial Stages
- ☒ Observed (17:27)
- ☒ Target
- ☒ H + Mandible Stages
- ☒ Observed (17:37)



● Patient ● Limits ● Differences ● Space Management ● Bonding Connection ● Technique ● U/L Relation ● Bracket Offset ● Side Line ● Target Connection

Technique

19	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
Inset [mm]	0.6	1	1.1	1.1	0.7	1.3	1.1	1.1	1.3	0.7	1.1	1.1	1	0.8	0.4
Torque [°]	-25	-10	-7	-7	-7	-7	-14	-14	-7	-7	-7	-10	-10	-25	-25
Angulation [°]	3	0	0	0	10	8	5	5	8	10	0	0	0	3	3
Dist. Offset [°]	10	5	12	0	0	0	0	0	0	0	0	12	5	10	10
Buccal Step [mm]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jig Height [mm]	4	4	4	4	4	4.5	4	4	4	4.5	4	4	4	4	4

For Help, press F1

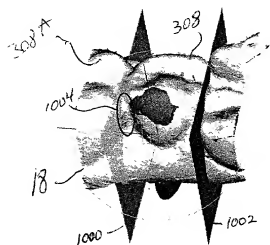


Fig. 64A

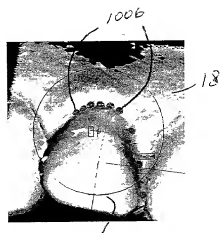


Fig. 64B

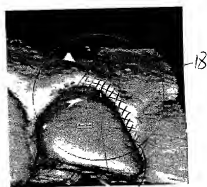


Fig. 64C

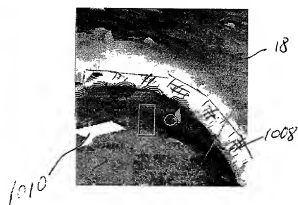


Fig. 64D

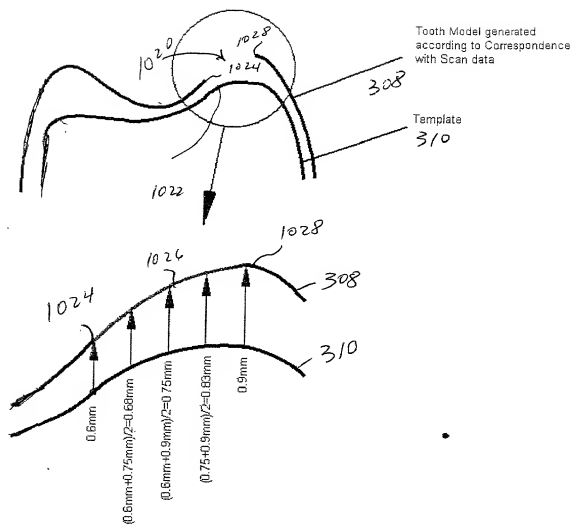


Fig. 65